

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A field-effect semiconductor device comprising:
a channel layer;
a contact layer;
a semiconductor structure having an electron-affinity different from those of the channel layer and the contact layer and formed between the channel layer and the contact layer, the semiconductor structure having a first junction face between the semiconductor structure and the channel layer and having a second junction face between the semiconductor structure and the contact layer;
an ohmic electrode formed on the contact layer; and
a Schottky electrode formed on the semiconductor structure; wherein
~~wherein~~ both of the first junction face and the second junction face are iso-type heterojunctions; ~~and~~
the semiconductor structure is composed of a single material and includes at least ~~two~~ three semiconductor layers;
the first junction face between the channel layer and the semiconductor structure and the second junction face between the contact layer and the semiconductor structure are iso-type heterojunctions;
the channel layer and the semiconductor structure at the first junction face are each formed of doped layers;
the contact layer and the semiconductor structure at the second junction face are each formed of doped layers; and
the semiconductor structure includes an undoped layer intermediate the doped layers thereof.

Claim 2 (currently amended): A field-effect semiconductor device according to claim 143, wherein the channel layer and the doped layer of the semiconductor structure at the first junction face are each n-type doped layers, and the contact layer and the doped layer of the semiconductor structure at the second junction face are each n-type doped layers.

Claim 3 (previously presented): A field-effect semiconductor device according to claim 2, wherein the channel layer and the semiconductor structure at the first junction face each have a dopant concentration of $1 \times 10^{18} \text{ cm}^{-3}$, and the contact layer and the semiconductor structure at the second junction face each have a dopant concentration of $1 \times 10^{18} \text{ cm}^{-3}$.

Claim 4 (previously presented): A field-effect semiconductor device according to claims 1 or 2, wherein the electron-affinity of the semiconductor structure is smaller than those of the channel layer and the contact layer.

Claim 5 (previously presented): A field-effect semiconductor device according to claim 3, wherein the electron-affinity of the semiconductor structure is smaller than those of the channel layer and the contact layer.

Claim 6 (original): A field-effect semiconductor device according to claim 4, wherein the semiconductor structure is composed of AlGaAs.

Claim 7 (original): A field-effect semiconductor device according to claim 5, wherein the semiconductor structure is composed of AlGaAs.

Claim 8 (original): A field-effect semiconductor device according to claims 1, 2 or 3, wherein the channel layer is composed of InGaAs.

Claim 9 (previously presented): A field-effect semiconductor device according to claim 8, wherein the electron-affinity of the semiconductor structure is smaller than those of the channel layer and the contact layer.

Claim 10 (original): A field-effect semiconductor device according to claim 8, wherein the semiconductor structure is composed of AlGaAs.

Claim 11 (canceled).

Claim 12 (previously presented): A field-effect semiconductor device according to claim 14, wherein the channel layer and the doped layer of the semiconductor structure at the first junction face are each n-type doped layers, and the contact layer and the doped layer of the semiconductor structure at the second junction face are each n-type doped layers.

Claim 13 (canceled).

Claim 14 (currently amended): A field-effect semiconductor device according to claim 1~~43~~, wherein the Schottky electrode is in contact with the undoped layer.

Claim 15 (canceled).